

REMARKS

Claims 1-5, 7, 8, 10-22, 24, 25, 27-49, and 51-58 are pending in this application. Claims 34-47 and 57 have been withdrawn.

In the Office Action dated March 24, 2005, the Examiner rejected claims 1-5, 7, 8, 10-22, 24, 25, 27-33, 48, 49, 51-56, and 58. In particular, claims 1-5, 7, 8, 10, 15-20, 48, 51-56 and 58 were rejected under 35 U.S.C. 103(a) as being obvious over U.S. Patent No. 6,096,164 ("Benson") in view of either one of U.S. Patent No. 6,082,660 ("Meyer") or U.S. Patent No. 3,874,030 ("Knight"). Also, claims 11-14, 21, 22, 24, 25, 27-33, and 49 were rejected under 35 U.S.C. 103(a) as being unpatentable over Benson, Meyer, and Knight as applied above and further in view of either one of U.S. Patent No. 4,921,557 ("Nakamura") or U.S. Patent No. 3,886,029 ("Poulsen").

Applicants would like to thank the Examiner for the interview on September 20, 2005, as summarized in the Interview Summary issued on that date.

As indicated above, Applicants have amended claims 1, 3, 7, 11, 15-18, 21, 24, 31, 48, 49, 51-54, 56 and 58, canceled claims 8 and 25, and added new claims 59-60. In light of these amendments and the arguments below, Applicant respectfully request that the rejections of the pending claims be withdrawn and the claims be allowed to issue

**Rejection of Claims 1-5, 7, 8, 10, 15-20, 48, 51-56 and 58
Under 103(a) over Benson in view of Meyer or Knight**

To establish a *prima facie* case of obviousness, the MPEP requires that the Examiner demonstrate (1) some suggestion or motivation to modify the reference or combine reference teachings; (2) a reasonable expectation of success; and (3) that the prior art references teach or suggest all the claim limitations. MPEP § 2142 (8th Ed., revised May 2004). A *prima facie* case

of obviousness of claims 1-5, 7, 8, 10, 15-20, 48, 51-56 and 58, as amended, cannot be established based on Benson, Meyer, and Knight, because these references do not teach or suggest all the claim limitations and because there is no motivation to combine these references to create the invention of the claims. Therefore, Applicants respectfully request that the Examiner withdraw these rejections.

All of these claims, as amended, require “at least two winding eyes” that are “oriented such that each fiber bundle exits a winding eye in substantially the same plane as each other fiber bundle and at a specified distance from each other fiber bundle.” The claims also require that “the winding eyes and curved rods are oriented such that as the fiber bundles spread, the distance between the fiber bundles decreases forming a substantially continuous band of fiber bundles.” Benson, Meyer, and Knight do not teach or suggest these elements of the claims.

Benson discloses a device for placing multiple tows of fiber on a mandrel to form a structure. As discussed during the interview, and as was acknowledged by the Examiner, Benson does not disclose the use of winding eyes to orient the fiber bundles as they enter the spreading assembly. *See, e.g.*, Figures 2-3, Col. 5, l. 57 - Col. 6, l. 46. Moreover, in Benson, the fibers are passed over only straight rods to ribbonize the fibers. *Id.* Benson does not disclose curved rods or the use of such rods to spread the fibers beyond this ribbonizing process. Finally, as was also acknowledged by the Examiner, Benson does not disclose orienting the curved rods and winding eyes “such that as the fiber bundles spread, the distance between the fiber bundles decreases forming a substantially continuous band of fiber bundles.” Instead, the device of Benson only discloses ribbonizing a series of tows into a stiffened ribbon. *Id.* Therefore, Benson does not teach or suggest these claimed limitations.

Meyer discloses only the use of curved rods to separate material webs. *See, e.g.,* Figure 1. Meyer does not disclose the use of “at least two winding eyes” that are “oriented such that each fiber bundle exits a winding eye in substantially the same plane as each other fiber bundle and at a specified distance from each other fiber bundle.” Moreover, Meyer also does not disclose the spreading of fibers. Therefore, Meyer does not teach or suggest orienting the winding eyes and curved rods “such that as the fiber bundles spread, the distance between the fiber bundles decreases forming a substantially continuous band of fiber bundles.” Therefore, Meyer also does not teach or suggest these limitations.

Finally, Knight discloses only the use of curved rods to spread single webs of material. Col. 3, l. 32-35. Knight does not, however, teach or suggest spreading of multiple fiber bundles on a spreading assembly “such that as the fiber bundles spread, the distance between the fiber bundles decreases forming a substantially continuous band of fiber bundles.” Further, Knight does not disclose the use of “at least two winding eyes” that are “oriented such that each fiber bundle exits a winding eye in substantially the same plane as each other fiber bundle and at a specified distance from each other fiber bundle.” Therefore, Knight also does not teach or suggest these limitations.

Since none of the cited references teach or suggest all the limitations of the claims, as amended, a *prima facie* case of obviousness cannot be established. Therefore, on this basis alone, the rejection of these claims should be withdrawn. Should the Examiner disagree, however, Applicants also respectfully assert that no motivation to combine these references to create the claimed invention exists because one skilled in the art to which this application pertains would recognize that at least one of the references could not perform the functions of the claimed apparatus.

Specifically, Benson teaches only the use of tows preimpregnated with resin. (Col. 4, l. 8-11.) The use of the combination of oriented winding eyes and curved rods, as claimed by Applicants, in the device of Benson would cause significantly spreading of the tows, which would also cause the preimpregnated resin to separate from the tows. This would render the Benson device unsatisfactory for its intended purpose because it would affect both the curing of the fiber tows and the operation of the device itself due to resin intrusion in the device. When the “proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification.” MPEP § 2143.01 (8th Ed., revised May 2004). Therefore, for this additional reason, these claims are not obvious over the combination of Benson, Meyer, and Knight.

Thus, because these references do not teach or suggest all the claimed limitations and because there is no motivation to combine these references, Applicants respectfully request that the rejection of claims 1-5, 7, 8, 10, 15-20, 48, 51-56 and 58 be withdrawn.

**Rejection of Claims 11-14, 21, 22, 24, 25, 27-33, and 49
Under 103(a) over Benson, Meyer, and Knight in view of Nakamura and Poulson**

A *prima facie* case of obviousness can not be established for claims 11-14, 21, 22, 24, 25, 27-33, and 49 based on Benson, Meyer, and Knight, in view of Nakamura or Poulson as well. Specifically, because these references do not teach or suggest all the limitations of these claims, as amended, and because there is no motivation to combine these references to create the invention of the claims, Applicants respectfully request that the Examiner withdraw these rejections.

As discussed above, Benson, Meyer, and Knight do not teach or suggest an apparatus or system having “at least two winding eyes” that are “oriented such that each fiber bundle exits a

winding eye in substantially the same plane as each other fiber bundle and at a specified distance from each other fiber bundle” and wherein “the winding eyes and curved rods are oriented such that as the fiber bundles spread, the distance between the fiber bundles decreases forming a substantially continuous band of fiber bundles.” Similarly, neither Nakamura nor Poulsen teach or suggest these limitations.

Nakamura discloses the application of multiple tows of fiber to a mandrel. *See, e.g.*, Figure 5. Nakamura, however, does not disclose winding eyes in any form, let alone winding eyes that are “oriented such that each fiber bundle exits a winding eye in substantially the same plane as each other fiber bundle and at a specified distance from each other fiber bundle.” In addition, Nakamura does not disclose spreading of the tows of fiber. In fact, Nakamura, does not disclose curved rods or orienting the winding eyes and curved rods “such that as the fiber bundles spread, the distance between the fiber bundles decreases forming a substantially continuous band of fiber bundles.” Therefore, Nakamura does not teach or suggest these claimed limitations.

Similarly, Poulsen also discloses only the application of multiple tows of fiber to a mandrel without a disclosure of winding eyes, curved rods, or fiber spreading. *See, e.g.*, Figure 1. Therefore, Poulsen also does not disclose winding eyes “oriented such that each fiber bundle exits a winding eye in substantially the same plane as each other fiber bundle and at a specified distance from each other fiber bundle.” Further, it does not disclose the combination of curved rods and winding eyes oriented “such that as the fiber bundles spread, the distance between the fiber bundles decreases forming a substantially continuous band of fiber bundles.” Therefore, Poulsen also does not teach or suggest these claimed limitations.

Since none of the cited references teach or suggest all the limitations of the claims, as amended, a *prima facie* case of obviousness cannot be established. Moreover, since neither Nakamura nor Poulsen add any teaching of the elements previously explained to be absent from Benson, Meyer, and Knight, for the same reasons discussed above, there would be no motivation to combine these references to make the claimed invention. Therefore, because a *prima facie* case of obviousness cannot be established for claims 11-14, 21, 22, 24, 25, 27-33, and 49 over the cited references, Applicants respectfully request that the rejection of these claims be withdrawn.

New Claims 59-60

Applicants have also added new claims 59-60. Support for these claims exists in the specification, and they do not add any new matter. Specification at ¶¶ 91-108. Moreover, because they include all the claim limitations discussed above, Applicants respectfully assert that these claims are also allowable for the reasons discussed above.

Conclusion


In view of the foregoing amendments and remarks, Applicants respectfully request the reconsideration and reexamination of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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